

Classics of the Alcohol Literature

Magnus Huss' *Alcoholismus Chronicus*

TO students of inebriety the name of Magnus Huss is familiar as the originator of the nosologic term "chronic alcoholism." There seems to be less familiarity, however, with the formulations to which Huss applied this term, or with his interesting reflections on some of the manifestations attendant upon habitual inebriety.

The alcohol literature abounds with quotations from Huss. But it is always the same paragraph which is quoted again and again, signaling the second-hand nature of the quotation. The work of Huss merits to be better known, although it can hardly be recommended that his verbose and repetitious volume should be studied in its entirety.

The Swedish physician and temperance advocate, Magnus Huss (1807-1890), was for several years in attendance at the Serafim Infirmary of Stockholm. There he accumulated his experience with patients suffering from the sequelae of habitual consumption of distilled spirits. In Huss' time Sweden was at the top of the list of countries in the order of consumption of liquor. That it is today near the bottom of that list may be attributed in some degree to the impetus which Huss gave to the Swedish temperance movement.

Huss was led by his earnest interest in the alcohol question to systematize the knowledge gained at the Serafim Infirmary. He sought to furnish a basis for the treatment of the effects of inebriety and for the better understanding of what seemed to him the essential consequences of the alcohol habit. In 1849 Huss published his voluminous opus *Alcoholismus chronicus eller: kronisk alkobolssjukdom (Alcoholismus Chronicus or the Chronic Alcohol-disease)*.

In his introduction Huss says that previous writers had dealt largely with the digestive disturbances of the chronic drinker, to the neglect of the effect of habitual alcohol indulgence on the nervous system. The latter, however, he regarded as the essential outcome of years of excessive drinking, since such effects as are manifested in the stomach and liver could be brought about by other agents than alcohol. Throughout his book Huss struggled with the expression of his idea that the condition which he designated as *alcoholismus chronicus* was a syndrome of nervous symptoms; and by nervous symptoms he seems to have meant

behavior changes rather than neurologic involvements. Although he emphasized and reemphasized this point, he did not succeed in making it clear. And in spite of his protestations that the organic changes of the inebriate were less characteristic of the condition, the bulk of his discussion is devoted to these organic changes. Moreover, his most important and most interesting contributions relate to the organic changes. Huss says:*

Since those pathologic changes of organs, caused more or less directly through the ingestion of brandy,† do not show any specific forms but can be brought about by many other causes, it does not appear justified to describe them in one complex as a specific disease but to deal with them separately under the heading of each separate organ. To clarify this, one may refer to the chronic inflammation of the stomach and intestines, the fatty liver and the cirrhosis of the liver, which sometimes are brought about by the consumption of brandy but also can have a large variety of other origins but, irrespective of the etiology, show the same anatomic changes. The case of the symptoms pertaining to the nervous system, however, is an entirely different matter. These symptoms find no counterpart in any observable change of the brain, cerebrospinal system or nerves. These symptoms are formed in such a particular way that they form a disease group in themselves and thus merit being designated and described as a definite disease.... It is this group of symptoms which I wish to designate by the name *Alcoholismus chronicus*. By this designation I thus refer only to those disease manifestations which, without any direct connection with organic changes of the nervous system, take on a chronic form in persons who, over long periods, have partaken of large quantities of brandy. I exclude also the acute affections of the nervous system, such as the *Rausch* and its immediate sequelae, and also that condition which has been given the name *delirium tremens*, and which I designate by the term *Alcoholismus acutus*.

What "These symptoms are" which group themselves "in such a particular way that they form a disease group in themselves," was not shown by Huss. As he proceeded in developing the idea he lost himself more and more in contradictions and vague formulations.

The terms *alcoholismus chronicus* and *alcoholismus acutus* had their forerunners in the designations *methismus chronicus* and *acutus* proposed by Fuchs, in his *Lehrbuch der speziellen Nosologie und Therapie*,

*This as well as all following quotations are the commentator's translation from the German version: *Chronische Alkoholskrankheit, oder Alcoholismus Chronicus*. By MAGNUS HUSS. Translated from the Swedish, with revisions by the author, by GERHARD VAN DEM BUSCH. Stockholm; C. E. Fritze, 1852.

†Huss always refers to brandy, but it is evident from his discussion that in this term he includes any distilled spirits.

in 1817. It is not so much the use of the term "chronic alcoholism" which is original with Huss as, rather, the delimitation of the disease entity which he thus designates, although the delimitation is vague.

The most useful idea expressed by Huss is that such behavior changes as occur in chronic alcoholics are not accounted for by any observable pathology of the brain and nerves. For many decades following Huss, and sporadically in present times, a specific brain pathology has been claimed in chronic alcoholism. But it is the modern conclusion that, aside from Wernicke's syndrome and complete nicotinic acid deficiency encephalopathy, the brain changes observed in chronic alcoholics are too insignificant to account for the gross changes in behavior.

Huss' conception of chronic alcoholism was intuitive. His psychiatric experience, according to his own admission, was negligible. It is significant that this investigator, who sought to limit chronic alcoholism essentially to "mental" and nervous system changes, harped in his case histories mainly on the digestive system, the kidneys and the lungs. This is true even of his case histories of patients with an alcoholic psychosis. He described hallucinations and delusions, but outside of these gross psychotic manifestations he hardly touched upon the behavior changes of the nonpsychotic chronic alcoholics. Nevertheless, his case histories are not without interest.

Some of Huss' psychiatric observations are noteworthy. He felt that there was no definite border between the symptoms of alcoholic and nonalcoholic mental diseases. He asserted, furthermore, that it was difficult or even impossible to determine whether the mental disorder was solely dependent upon the alcoholic excess or whether there were also other underlying factors. It is of particular interest that Huss found, as the outstanding characteristic of the chronic alcoholic, an anxiety which was not attached to any specific object but was of a general, vague nature which the patient himself could not express in any more specific way than "I am desperate." According to Huss, there is no difference between this condition and melancholia.

Of particular interest is the mental condition, found among chronic alcoholics by Huss, which he describes under the name of *stupidité ébriouse*. He says that it is largely characterized by impairment of memory and an inability of the patient to remember what he wanted to do. This state is later followed by a dulling of thought and of judgment. A further significant clue to the identity of this disease is the

observation that it is frequently the sequel to delirium tremens. It seems likely that what Huss described under *stupidité ébrieuse* is the condition known today as Korsakoff's psychosis.

Huss attributed the suicidal tendency of the habitual inebriate to his general anxiety state. In this connection he cited some early statistics. According to Casper,* one-fourth of the suicides in Germany, between 1812 and 1821, were due to the abuse of alcohol.

Of changes in the sex drive Huss said that the craving persisted longer than the potency. Women, he found, often had sexual fantasies in the course of delirium tremens, but men, not. In women, also, the sex drive seemed to be increased at the beginning of chronic alcoholism, but later was decreased.

Huss was not successful in demonstrating the mental and nervous components of the syndrome of chronic alcoholism, or in demonstrating their essential nature as determinants of the condition. His description of the nervous symptoms and of psychotic manifestations was meager. As symptoms of the motor sphere of the nervous system Huss pointed out a tremor of the hands and arms. This was said to be a nuisance, although not accompanied by pain. More rarely he found tremors of the lips and tongue, and sometimes of the whole body. He cites also diminished strength and a condition of weakness and dysfunction of the locomotor system. At certain times chronic alcoholics are subject to convulsive fits which resemble chorea, and some of the inebriates have premonitions of the fits. Huss believed that epilepsy can be provoked by alcohol but that in some cases it is a matter of drinking epileptics. He pointed out that epilepsy may occur in drinkers without preceding alcohol poisoning but that usually it is preceded by paresis of some degree.

Outstanding among the symptoms of the sensory sphere of the nervous system, described by Huss, is *formication*. This begins in the feet and legs and, in ordinary cases, does not spread. Sometimes, however, it spreads up the legs to the thighs, and sometimes up to the arms. It may begin rather early in the course of chronic alcoholism. Occasionally stabbing and drawing pains occur in association with formication. Hyperesthesia and neuralgic pains are mentioned as encountered but rarely. Sensitivity is found mainly in the shins. Cutaneous sensation is diminished but muscular sensitivity is increased. Changes in the eyes and vision may occur even before more definite symptoms of poisoning occur; these consist chiefly of a swelling of the peripheral blood vessels

*Beiträge zur medizinischen Statistic und Staatsarzneikunde, 1825.

of the eyes and diminished sensitivity to light. Huss believed that this may be taken as one of the main signs of beginning chronic alcoholism. He noted also increased dilatation and decreased mobility of the pupils, and blackness in front of the eyes, weakened vision, and inability to focus properly. These symptoms are accompanied by dizziness. Changes in hearing are not constant symptoms of chronic alcoholism. Ringing in the ears occurs usually after acute intoxication or after delirium. Changes in speech may depend upon abnormal movements of the tongue muscles, associated with convulsions. In the progress of chronic alcoholism, Huss pointed out, the activity of the tongue is affected in either of two ways: Involuntary twitching or trembling, which renders the speech stumbling, or the musculature of the tongue becomes flaccid.

Huss stated that even in the absence of any other symptoms of chronic alcoholism the chronic inebriate has such vivid dreams that on waking he takes them to be real. Real hallucinations, however, are also frequent, and he had observed them when no other symptoms were present. The commonest form of hallucinations in chronic alcoholism, even apart from delirium tremens, is the visual type. Auditory hallucinations are less frequent, and Huss had noted olfactory hallucinations only twice. Gustatory hallucinations occur only when the patient has a craving for brandy; if he is given any drink, even water, he believes he is drinking brandy. Tactile hallucinations occur only in delirium tremens.

More significant are Huss' observations on the changes of organs and their functions in chronic alcoholics. In the anatomic and pathologic changes observed in excessive drinkers he distinguished between those due to local irritation by alcohol, those due to the alcohol contained in the blood, and, lastly, indirect effects. The chronic inflammation of the stomach lining and the increased heart activity he imputed to local irritation. To alcohol in the blood he ascribed bronchial catarrh, "piarraemia," and the difficulty of the blood to "decarbonize itself." As indirect effects he regarded fatty liver and kidney conditions found in inebriates.

According to Huss, the continued irritation of the stomach by alcohol and the concomitant increased flow of blood to the stomach sooner or later bring about the chronic inflammation of the stomach which is common to inebriates. Morning vomiting, usually preceded by foul belching, is symptomatic of this condition. The state of appetite varies greatly in different stages of the development of chronic alcohol-

ism. At first it is good, with a strong craving for fatty meals. Later, when the mucous membranes of the stomach become diseased, appetite diminishes. Lastly, some drinkers live on brandy only. This is followed by emaciation, and sometimes by cancer of the stomach, as well as simple gastric ulcers. Concerning the role of alcohol in the etiology of cancer of the stomach, Huss says: "One can speak only of a predisposing role of alcohol, since the ultimate cause is the grief, the sorrow and the guilt feelings of the alcoholic."

On the pathogenesis of cirrhosis of the liver in chronic alcoholics Huss had more advanced ideas than most students of the problem during the following 60 or 70 years. He noted that the liver is usually diseased in excessive drinkers and that the most prevalent form is the "hypertrophic nutmeg liver" and, next to it, the fatty liver. He observed, however, that these conditions in chronic alcoholism do not differ from the same conditions with other etiologic factors. He wrote:

The cause for this, I believe, must be looked for in the quantitatively as well as qualitatively changed behavior of the portal blood. The assumption of Thomson* that the chronic inflammation of the mucous membrane of the duodenum propagates itself up to the liver, does not seem to be acceptable. The portal blood directly takes up a large part of the ingested alcohol, partly in an unchanged condition and partly in combination with food-stuffs. In this process the volume of blood in the portal system is greatly increased due to the continuous irritation of the stomach and intestines which brings about more rapid absorption. The first step in the process is a greater flow of blood to the liver; and since this blood has a greater fat content than it ought to have, it brings about a deposition of fat into the tissues of the liver. The nutmeg liver seems to precede the fatty liver. When the fat deposition reaches a certain degree, the bile ducts and blood vessels become compressed, the nourishing of the organ decreases and atrophy of the organ follows. The granulated liver, which is also atrophic, could originate in an inflammation of the parenchymatous tissue, but it is probable that more often it is a sequel of preceding fatty liver. The transition is brought about through an involution of the fatty infiltrate.

In 1780 Ploucquet† suggested that the ill effects of distilled spirits originated in the copper acetate‡ which may enter into the spirits from the distilling apparatus. This suggestion found many believers and was still in vogue in the middle of the nineteenth century. Huss remarked that, with the improvements in distillation that had taken place, par-

*A Practical Treatise on the Diseases of the Liver; Edinburgh, 1841.

†*Warnung an das Publikum für einem in manchen Branntweinen enthaltenen Gift samt den Mitteln es zu entdecken und auszuschneiden*. Tübingen; J. F. Heerbrandt, 1780.

‡Modern equivalent of the eighteenth-century term *Essigsäures Kupfer Oxyd*.

ticularly the tin lining of copper vessels, copper had disappeared entirely from brandy, or was present only in negligible quantities, but nevertheless excessive drinkers were still suffering from the same diseases. He thus concluded that alcohol was sufficiently potent to cause the chronic poisoning which Ploucquet had ascribed to copper. But Huss' opinion in this instance, as in many others, failed to convince the medical generations that followed, and as recently as 1921 Ploucquet's view was newly suggested by American investigators.*

The role of nutrition in the genesis of the diseases of chronic alcoholism was recognized by Huss. He expressed the opinion that a laborer who drinks 5 or 6 brandies a day, and even double on Sundays, will not suffer any great ill effects, except that his digestion may become worse, as long as he eats well. Huss does not recommend, however, that every laborer should drink the quantities mentioned. He does not deny that there are ill effects also in excessive drinkers who eat well, but points out that the effects are much milder and easily remediable. He emphasized that the evil begins when one drinks without eating.

Huss considered experimental verification of the effects of alcohol to be essential. He induced Professor R. Dahlström to carry out a series of experiments with dogs. These experiments are among the earliest described in the alcohol literature.

Three dogs were given 6 oz. of brandy, in a single dose, each day for 8 months. At the beginning the animals liked the liquor, but later they had to be forced to take it. During the first 3 months they showed vivaciousness after alcohol intake. Afterward this changed to savagery and the animals manifested a great craving for food and water. In the fourth month their barking became hoarse and toneless. There was a dripping from their eyes, and they stared noticeably. Their hearing was impaired, their behavior showed indifference, their sleep became disturbed, with subsultus in the legs and whining sounds. After the fourth month trembling and twitching of the extremities was noted. With the continuation of alcohol administration the dogs became weak, their cutaneous sensation became dull, especially around the ears, and the craving for food diminished until they did not want to eat at all. They were savage toward other dogs. After 8 months 1 dog died and the other 2 were killed. Autopsy showed the following: Stomach, contracted; lining, lead-colored, edematous; intestinal canal, lined with foul-smelling mucus; spleen and kidney, unchanged; heart, in good condition; mucous membranes of nose, windpipe and bronchi,

*MALLORY, F. B., PARKER, F., JR. and NYE, R. N. J. med. Res. 42: 461, 1921.

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slightly inflamed; vessels of the brain, rich in blood; muscles, flaccid; fat and subcutaneous cell tissue, loose.

From this experiment Huss concluded that the symptoms ascribed to chronic alcoholism were actually due to the misuse of alcohol; that the inebriate can usually withstand the effects of alcohol as long as he eats, but that sooner or later appetite is lost when the activity of the stomach is impaired through either chronic inflammation of the mucous lining or atonia. This, in turn, reacts on the liver and on bile production. "Thus it appears that excessive drinking alone does not suffice to bring about the symptoms of chronic alcoholism but that other factors must contribute in such a way that the misuse of brandy first brings about changes in the digestive processes before symptoms of the nervous system can develop."

The question arose in Huss' mind whether the toxic effect of distilled spirits was due to alcohol itself or to the congeners. He prevailed upon Dahlström to carry out an experiment with fusel oil. For a period of 7 weeks increasing doses of fusel oil were administered to a dog. Four drops per day were given during the first week, and 120 drops per day during the sixth and seventh weeks. No signs of toxicity were observed. At the end of the experiment the dog was killed and no anatomic changes were noted at autopsy.

Relative to the etiology of the habit of excessive drinking, Huss stated that his knowledge was insufficient to warrant a theory. Under the heading of predisposing causes, however, he offered some suggestions which indicate his belief in social causes. He found more excessive drinking in urban than in rural areas, and this he attributed to the greater immorality of the urban population, greater accessibility of alcoholic beverages, bad example, and unsanitary and unpleasant living quarters. Occupational inebriety, he thought, could be spoken of only in the case of distillery employees. If other occupations showed a high prevalence of inebriety it could not be attributed to the occupation but rather to the mores of the social class.

Relative to the role of personality in the development of inebriety, Huss merely remarked that the "sanguine temperament" was more liable to alcoholic excess than the "nervous temperament." He also saw a possible constitutional factor. According to his observations, weak and slender persons seldom became inebriates; excessive drinkers were usually of the robust type. On the other hand, Huss denied the possibility of the inheritance of craving for alcohol, and attributed the occurrence of alcoholism among the offspring of alcoholics to neglect.

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